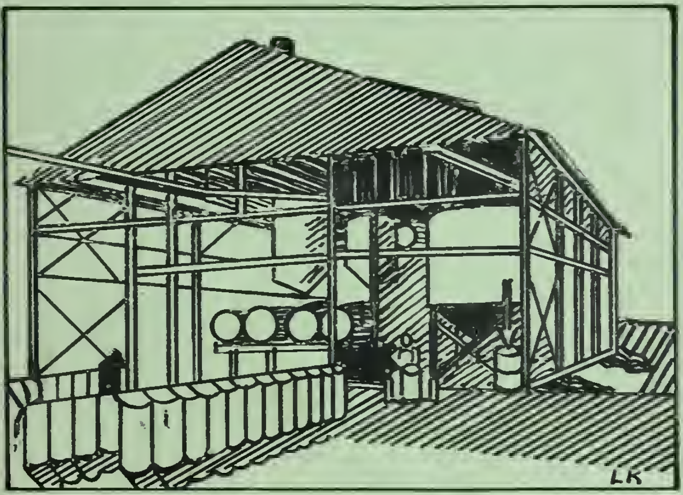
Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

BETTER ROSIN BY DOUBLE-WASHING IN GUM CLEANING



Agricultural Research Administration
BUREAU OF AGRICULTURAL AND INDUSTRIAL CHEMISTRY
Naval Stores Research Division

UNITED STATES DEPARTMENT OF AGRICULTURE AIC-311

AIC-311

BETTER ROSIN BY DOUBLE-WASHING IN GUM CLEANING

By

N. C. McConnell and E. L. Patton
Naval Stores Station, Olustee, Florida, Naval Stores Research Division, Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration

---

This article is written to call to the attention of processors the necessity for thorough washing of pine gum during the cleaning operation. The U. S. Forest Service advocates the use of sulfuric acid for stimulating the flow of gum from the pine trees, and the Naval Stores Station recommends the use of oxalic acid to remove iron stain from gum. It is necessary to remove these acids from the gum during cleaning to produce high-quality rosin.

A thoroughly clean rosin, one that is entirely free of mineral and oxalic acids, can be made from pine gum by double-washing the filtered gum.

This extra washing is an important step in the Olustee gum cleaning process (U. S. Patent No. 2,254,785), which has been continually improved in the decade it has been in use. Recirculation of the filtered, washed gum a second time through the wash tank is recommended by the Naval Stores Research Division of the Department of Agriculture in Olustee, Florida, where the Olustee process was originally developed. There is no loss in yield due to double-washing.

It is well recognized that washing of pine gum during cleaning is necessary to produce high-quality rosin. Conventional cleaning processes regularly include a single water-washing of filtered and settled gum. Gum cleaned with a single washing produces a high-grade, brilliant rosin, but such rosin may still contain traces of contaminating materials.

Gum rosin for decades has been marketed on color grade alone. So most processors are satisfied when they are producing a large percentage of pale-grade rosin. Washing out all the impurities at the time of cleaning the gum is the sure way to obtain the pure raw material.

Double-Washing is a Simple Step

In double-washing gum in the Olustee process, the necessary pumps and piping arrangements are usually already available in the plant.

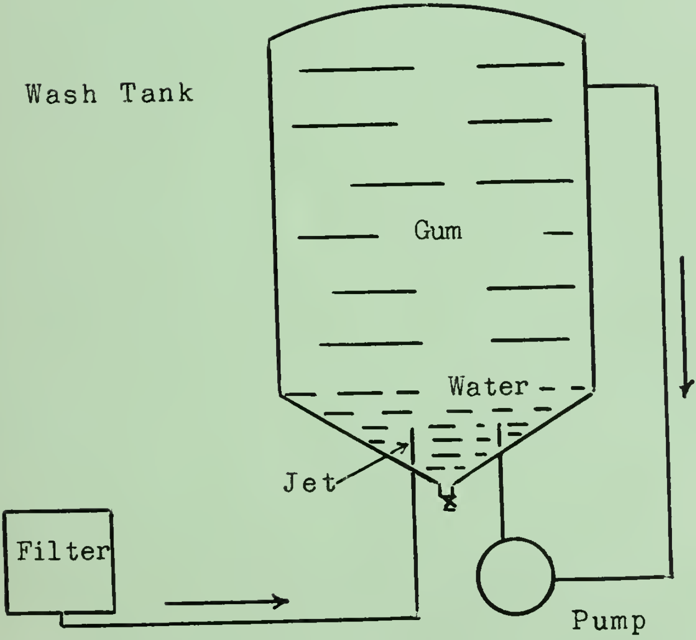
Most plants use wash tanks which have a conical bottom equipped with spray nozzle or jets. In ordinary cleaning this tank is filled with water to the top of the conical section; the hot gum leaving the filter enters this section; and from there is sprayed into the head of water covering the bottom. This jetting of the hot gum through the water one time constitutes the single-washing operation.

A second wash -- double-washing -- can be effected in the same cycle by forcing the gum, which by gravity separation has risen to the top of the tank leaving the wash water in the bottom, by means of the pump again into the wash water at the bottom of the tank, remixing water and gum. This operation requires about one hour per tank of gum in most plants. This time the gum is allowed to stand in the tank from 4 hours to overnight. During the rising of the gum and the falling of droplets of water to the bottom the traces of oxalic and sulfuric acids or microscopic-sized bodies, such as bits of chips, bark, and tannin, are removed. When the wash water is drawn to the sewer it contains this foreign material.

Additional information on this process will be furnished, upon request, by the Naval Stores Station.

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural and Industrial Chemistry
Naval Stores Research Division
Olustee, Florida

JULY 1951



A Wash Tank in the
Olustee Gum Cleaning Process

LIBRARY
CURRENT SERIAL RECORD
AUG 14 1951
U. S. DEPARTMENT OF AGRICULTURE